



## SSCP3906GS6

### PNP Switching Transistor

#### ➤ Features

| VCE  | VBE | VCESAT | IC     |
|------|-----|--------|--------|
| -40V | -5V | -400mV | -200mA |

#### ➤ Description

The PNP Transistor is designed for use in linear and switching applications. The device is housed in the SOT-23 package, which is designed for telephony and professional communication equipment.

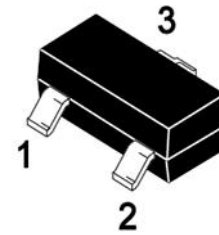
#### ➤ Applications

- General purpose switching and amplification
- Telephony and professional communication equipment

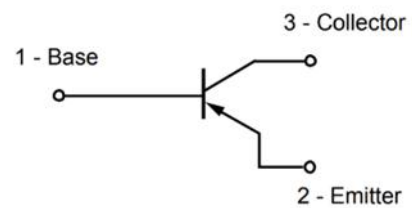
#### ➤ Ordering Information

| Device      | Package | Shipping  |
|-------------|---------|-----------|
| SSCP3906GS6 | SOT-23  | 3000/Reel |

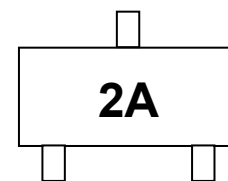
#### ➤ Pin configuration



**SOT-23**



**Circuit Diagram**



**Marking(Top View)**



➤ **Absolute Maximum Ratings**( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

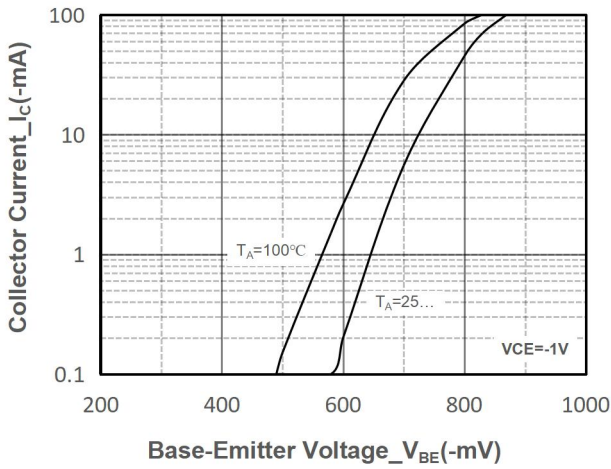
| Parameter                    | Symbol    | Value      | Unit               |
|------------------------------|-----------|------------|--------------------|
| Collector-Base Voltage       | $V_{CB0}$ | -40        | V                  |
| Collector- Emitter Voltage   | $V_{CEO}$ | -40        | V                  |
| Emitter-Base Voltage         | $V_{EBO}$ | -5         | V                  |
| Collector Current-Continuous | $I_C$     | -200       | mA                 |
| Collector Power Dissipation  | $P_C$     | 200        | mW                 |
| Junction Temperature         | $T_J$     | 150        | $^{\circ}\text{C}$ |
| Storage Temperature          | $T_{STG}$ | -55 to 150 | $^{\circ}\text{C}$ |

➤ **Electrical Characteristics** ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

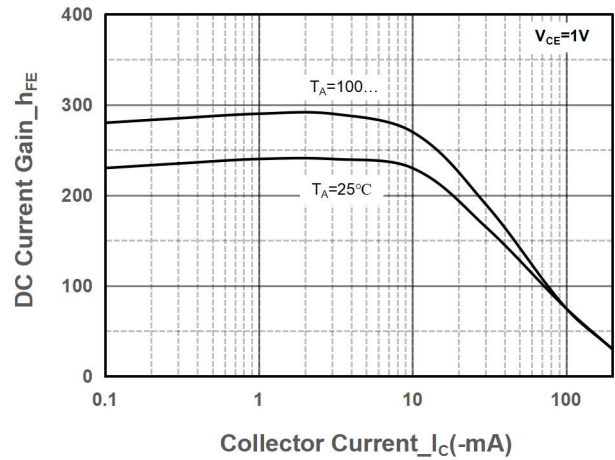
| Parameter                            | Symbol        | Test Conditions   | Min. | Typ. | Max.  | Unit |
|--------------------------------------|---------------|---|------|------|-------|------|
| Collector-Base Breakdown Voltage     | $BV_{CB0}$    | $I_C=-10\mu\text{A}, I_E=0$                                 | -40  |      |       | V    |
| Collector-emitter Breakdown Voltage  | $BV_{CEO}$    | $I_C=-1\text{mA}, I_B=0$                                    | -40  |      |       | V    |
| Emitter -Base Breakdown Voltage      | $BV_{EBO}$    | $I_E=-10\mu\text{A}, I_C=0$                                 | -5   |      |       | V    |
| Collector Cutoff Current             | $I_{CEX}$     | $V_{CE}=-30\text{V}, V_{EB}=-3\text{V}$                     |      |      | -50   | nA   |
| Collector Cutoff Current             | $I_{CBO}$     | $V_{CB}=-30\text{V}, I_E=0$                                 |      |      | -100  | nA   |
| Emitter Cutoff Current               | $I_{EBO}$     | $V_{EB}=-3\text{V}, I_C=0$                                  |      |      | -100  | nA   |
| DC Current Gain                      | $h_{FE}$      | $V_{CE}=-1\text{V}, I_C=-10\text{mA}$                       | 100  |      | 300   |      |
|                                      |               | $V_{CE}=-1\text{V}, I_C=-0.1\text{mA}$                      | 60   |      |       |      |
|                                      |               | $V_{CE}=-1\text{V}, I_C=-100\text{mA}$                      | 30   |      |       |      |
| Collector-Emitter Saturation Voltage | $V_{CE(sat)}$ | $I_C=-50\text{mA}, I_B=-5\text{mA}$                         |      |      | -0.4  | V    |
| Base-Emitter Saturation Voltage      | $V_{BE(sat)}$ | $I_C=-50\text{mA}, I_B=-5\text{mA}$                         |      |      | -0.95 | V    |
| Transition frequency                 | $f_T$         | $V_{CE}=-20\text{V}, I_C=-10\text{mA}$<br>$f=100\text{MHz}$ | 250  |      |       | MHz  |
| Delay Time                           | $t_d$         | $V_{CC}=-3\text{V}, V_{BE}=0.5\text{V}$                     |      |      | 35    | ns   |
| Rise Time                            | $t_r$         | $I_C=-10\text{mA}, I_{B1}=-1\text{mA}$                      |      |      | 35    | ns   |
| Storage Time                         | $t_s$         | $V_{CC}=-3\text{V}, I_C=-10\text{mA}$                       |      |      | 225   | ns   |
| Fall Time                            | $t_f$         | $I_{B1}=-I_{B2}=-1\text{mA}$                                |      |      | 75    | ns   |



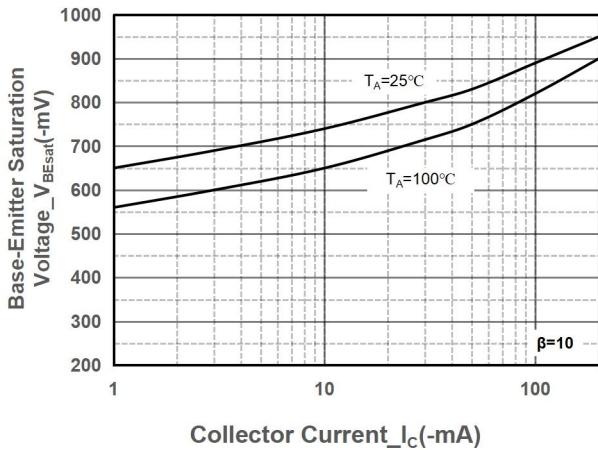
➤ **Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise noted)**



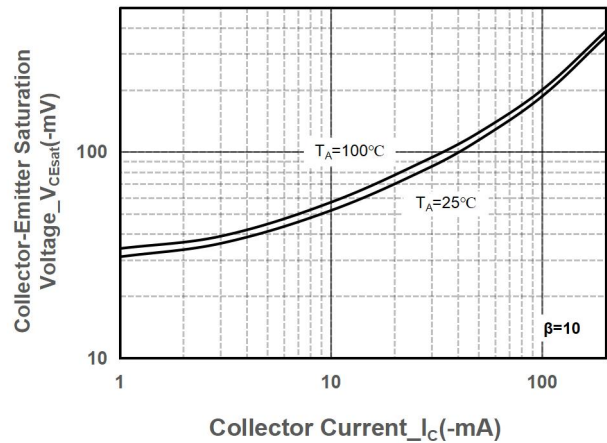
**Collector Current vs. Base-Emitter Voltage**



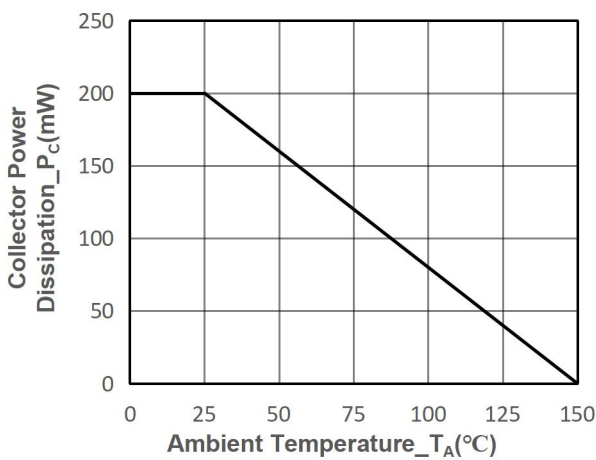
**DC Current Gain vs. Collector Current**



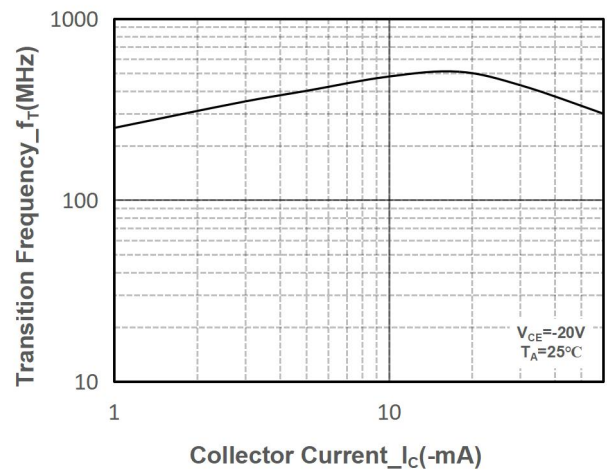
**$V_{BE(sat)}$  vs. Collector Current**



**$V_{CE(sat)}$  vs. Collector Current**

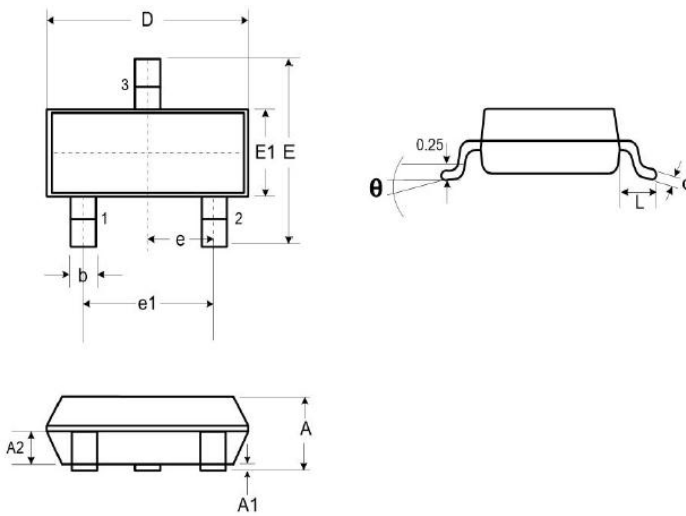


**Power derating vs. Ambient temperature**



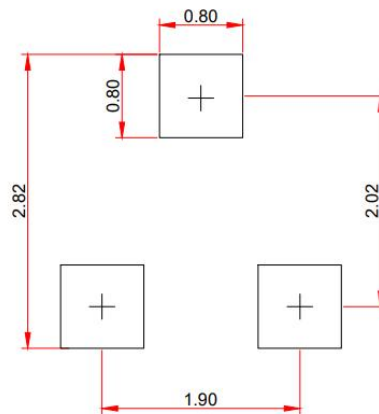
**Transition Frequency vs. Collector Current**

## ● Package Information



| DIM | Millimeters |      |      |
|-----|-------------|------|------|
|     | Min.        | Typ. | Max. |
| A   | 0.89        | -    | 1.12 |
| A1  | 0.01        | -    | 0.10 |
| A2  | 0.88        | 0.95 | 1.02 |
| b   | 0.30        | -    | 0.51 |
| c   | 0.08        | -    | 0.18 |
| D   | 2.80        | 2.90 | 3.04 |
| E   | 2.10        | 2.37 | 2.64 |
| E1  | 1.20        | 1.30 | 1.40 |
| e1  | 1.90        |      |      |
| e   | 0.95        |      |      |
| L   | 0.40        | 0.50 | 0.60 |
| L1  | 0.55        |      |      |
| N   | 3           |      |      |
| θ   | 0°          | -    | 8°   |

### Recommended Pad outline (Unit: mm)





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